

## Low-Power, Lightweight Cloud Water Content Sensor, Phase II

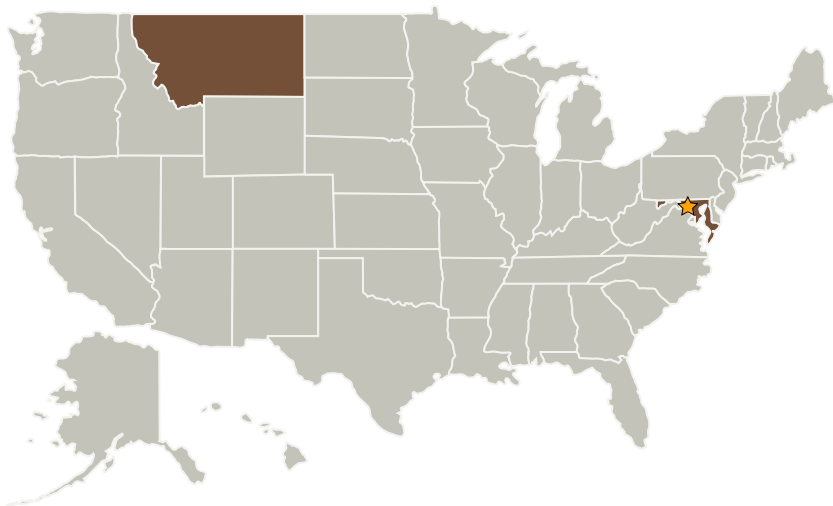
Completed Technology Project (2005 - 2007)



## Project Introduction

The measurement of cloud water content is of great importance in understanding the formation of clouds, their structure, and their radiative properties which in turn affect the climate. While a variety of sensors exist for making these measurements, all of the existing sensors require far too much power or other energy input to be used on small platforms with limited payloads such as UAVs, balloons, and kites. Anasphere has, in Phase I work, clearly demonstrated the feasibility of an entirely new technique for the in-situ measurement of cloud water content. The new sensor is lightweight (under 40 g), consumes very little power (the sensor can run for days on one 9-volt battery), and is very inexpensive. Phase II work will focus on refining the sensor design from both mechanical and electronic perspectives, completing extensive laboratory and field tests of the improved sensors, and delivering several examples to NASA. Two sequential cycles of design improvement, laboratory testing, and flight testing are envisioned. Samples of the sensors will be sent to NASA as part of each flight testing cycle. The Phase II effort will culminate in the availability of a simple and inexpensive cloud water content sensor for cloud research. This sensor will be very useful to scientists studying cloud formation and structure. It will enable such scientists to inexpensively obtain in-situ data that previously was obtained only through the use of an expensive research aircraft flying through the cloud.

## Primary U.S. Work Locations and Key Partners



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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Goddard Space Flight Center (GSFC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Anasphere, Inc.	Supporting Organization	Industry	Belgrade, Montana

## Primary U.S. Work Locations

Maryland	Montana
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## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX11 Software, Modeling, Simulation, and Information Processing
  - └ TX11.6 Ground Computing
    - └ TX11.6.5 Public Cloud Supercomputer